

**IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
TYLER DIVISION**

EON CORP. IP HOLDINGS, LLC,	§	
	§	
v.	§	NO. 6:08-cv-385
	§	
VERIZON CLINTON CENTER DRIVE	§	
CORP., et al.,	§	

MEMORANDUM OPINION & ORDER

This claim construction opinion construes the disputed terms in U.S. Patent Nos. 5,388,101 (“the ‘101 Patent”) and 5,481,546 (“the ‘546 Patent”) (collectively, “the patents-in-suit”). Plaintiff Eon Corp. IP Holdings, LLC (“Plaintiff”) alleges Defendant Verizon Clinton Center Drive Corp. (“Defendant”) infringes the ‘101 and ‘546 Patents.¹ The parties have presented their claim construction positions (Doc. Nos. 270, 274, 281). Also before the Court is claim construction briefing from Plaintiff and Sensus USA Inc. (“Sensus”), a defendant in the related case *Eon Corp. IP Holdings, LLC v. Sensus USA Inc.*, No. 6:09-cv-116, on certain terms common to the two cases (Case No. 6:09-cv-116, Doc. No. 124, 131).² On March 3, 2010, the Court held a claim construction hearing and heard argument (Doc. Nos. 300, 308). The Court issued a provisional claim construction order on May 17, 2010 (Doc. No. 323). For the reasons stated herein, the Court adopts the constructions set forth below.

¹ Defendants SmartSynch, Inc.; USA Mobility, Inc.; American Messaging Services, LLC; All Page of Houston, Inc.; Inilex, Inc.; Alarm.com Incorporated; Food Automaton Systems, Technologies, Inc.; Village Software, Inc.; Skygard, LLC; Vehicle Manufacturers, Inc.; Honeywell HomeMed, LLC; Nighthawk Systems, Inc.; Brink’s Home Security, Inc.; Carrier Corporation; Beckwith Electric Co., Inc.; DataOnline, LLC; MWA Intelligence, Inc.; ComSoft Corporation; and, Food Automation - Services Techniques, Inc. have been dismissed from the case.

² The Court considered the Plaintiff and Sensus’s briefing and argument as to common terms. The Court addresses those terms and issues that were raised only by Sensus in the claim construction order issued in the ‘116 case.

NOTE: Does excluding the link 21 from the processing and transmission means screw up the 112(2) issue?

CLAIM CONSTRUCTION PRINCIPLES

“It is a ‘bedrock principle’ of patent law that ‘the claims of a patent define the invention to which the patentee is entitled the right to exclude.’” *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312 (Fed. Cir. 2005) (quoting *Innova/Pure Water, Inc. v. Safari Water Filtration Sys., Inc.*, 381 F.3d 1111, 1115 (Fed. Cir. 2004)). The Court examines a patent’s intrinsic evidence to define the patented invention’s scope. *Id.* at 1313-1314; *Bell Atl. Network Servs., Inc. v. Covad Commc’ns Group, Inc.*, 262 F.3d 1258, 1267 (Fed. Cir. 2001). Intrinsic evidence includes the claims, the rest of the specification, and the prosecution history. *Phillips*, 415 F.3d at 1312-13; *Bell Atl. Network Servs.*, 262 F.3d at 1267. The Court gives claim terms their ordinary and customary meaning as understood by one of ordinary skill in the art at the time of the invention. *Phillips*, 415 F.3d at 1312-13; *Alloc, Inc. v. Int’l Trade Comm’n*, 342 F.3d 1361, 1368 (Fed. Cir. 2003).

Claim language guides the Court’s construction of claim terms. *Phillips*, 415 F.3d at 1314. “[T]he context in which a term is used in the asserted claim can be highly instructive.” *Id.* Other claims, asserted and unasserted, can provide additional instruction because “terms are normally used consistently throughout the patent.” *Id.* Differences among claims, such as additional limitations in dependent claims, can provide further guidance. *Id.*

“[C]laims ‘must be read in view of the specification, of which they are a part.’” *Id.* (quoting *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 979 (Fed. Cir. 1995)). “[T]he specification ‘is always highly relevant to the claim construction analysis. Usually, it is dispositive; it is the single best guide to the meaning of a disputed term.’” *Id.* (quoting *Vitronics Corp. v. Conceptronic, Inc.*,

90 F.3d 1576, 1582 (Fed. Cir. 1996)); *Teleflex, Inc. v. Ficoso N. Am. Corp.*, 299 F.3d 1313, 1325 (Fed. Cir. 2002). In the specification, a patentee may define his own terms, give a claim term a different meaning than it would otherwise possess, or disclaim or disavow some claim scope. *Phillips*, 415 F.3d at 1316. Although the Court generally presumes terms possess their ordinary meaning, this presumption can be overcome by statements of clear disclaimer. *See SciMed Life Sys., Inc. v. Advanced Cardiovascular Sys., Inc.*, 242 F.3d 1337, 1343-44 (Fed. Cir. 2001). This presumption does not arise when the patentee acts as his own lexicographer. *See Irdeto Access, Inc. v. EchoStar Satellite Corp.*, 383 F.3d 1295, 1301 (Fed. Cir. 2004).

The specification may also resolve ambiguous claim terms “where the ordinary and accustomed meaning of the words used in the claims lack sufficient clarity to permit the scope of the claim to be ascertained from the words alone.” *Teleflex, Inc.*, 299 F.3d at 1325. For example, “[a] claim interpretation that excludes a preferred embodiment from the scope of the claim ‘is rarely, if ever, correct.’” *Globetrotter Software, Inc. v. Elan Computer Group, Inc.*, 362 F.3d 1367, 1381 (Fed. Cir. 2004) (quoting *Vitronics Corp.*, 90 F.3d at 1583). But, “[a]lthough the specification may aid the court in interpreting the meaning of disputed language in the claims, particular embodiments and examples appearing in the specification will not generally be read into the claims.” *Constant v. Advanced Micro-Devices, Inc.*, 848 F.2d 1560, 1571 (Fed. Cir. 1988); *see also Phillips*, 415 F.3d at 1323.

The prosecution history is another tool to supply the proper context for claim construction because a patentee may define a term during prosecution of the patent. *Home Diagnostics, Inc. v. LifeScan, Inc.*, 381 F.3d 1352, 1356 (Fed. Cir. 2004) (“As in the case of the specification, a patent applicant may define a term in prosecuting a patent”). The well established doctrine of prosecution

disclaimer “preclud[es] patentees from recapturing through claim interpretation specific meanings disclaimed during prosecution.” *Omega Eng’g, Inc. v. Raytek Corp.*, 334 F.3d 1314, 1323 (Fed. Cir. 2003). The prosecution history must show that the patentee clearly and unambiguously disclaimed or disavowed the proposed interpretation during prosecution to obtain claim allowance. *Middleton, Inc. v. 3M Co.*, 311 F.3d 1384, 1388 (Fed. Cir. 2002). “Indeed, by distinguishing the claimed invention over the prior art, an applicant is indicating what the claims do not cover.” *Spectrum Int’l v. Sterilite Corp.*, 164 F.3d 1372, 1378-79 (Fed. Cir. 1998) (quotation omitted). “As a basic principle of claim interpretation, prosecution disclaimer promotes the public notice function of the intrinsic evidence and protects the public's reliance on definitive statements made during prosecution.” *Omega Eng’g, Inc.*, 334 F.3d at 1324.

Although “less significant than the intrinsic record in determining the legally operative meaning of claim language,” the Court may rely on extrinsic evidence to “shed useful light on the relevant art.” *Phillips*, 415 F.3d at 1317 (quotation omitted). Technical dictionaries and treatises may help the Court understand the underlying technology and the manner in which one skilled in the art might use claim terms, but such sources may also provide overly broad definitions or may not be indicative of how terms are used in the patent. *Id.* at 1318. Similarly, expert testimony may aid the Court in determining the particular meaning of a term in the pertinent field, but “conclusory, unsupported assertions by experts as to the definition of a claim term are not useful.” *Id.* Generally, extrinsic evidence is “less reliable than the patent and its prosecution history in determining how to read claim terms.” *Id.*

When claim construction involves means-plus-function limitations, the Court must identify the claimed function and the corresponding structure that performs that function. *Applied Medical*

Resources Corp. v. U.S. Surgical Corp., 448 F.3d 1324, 1332 (Fed. Cir. 2006). The Court's construction of the function must include only the limitations in the claim language. *Cardiac Pacemakers, Inc. v. St. Jude Medical, Inc.*, 296 F.3d 1106, 1113 (Fed. Cir. 2002). "Ordinary principles of claim construction govern the interpretation of the claim language used to describe the function." *Id.* The Court must then determine if the specification discloses a structure that performs the claimed function and is clearly associated with the performance of the function. *Id.*

DISCUSSION

A. Overviews of the Patents-in-Suit

As the '546 Patent is a continuation of the '101 Patent, the patents are essentially identical except for the claims themselves. The patents "relate[] to an interactive two-way data service network for conveying synchronously timed digital messages point to point through the network." '101 Patent at 1:8-10. The invention was directed at facilitating long distance communication with subscriber units of maximum effective radiated power under twenty watts on the Federal Communication Commission ("FCC") authorized 218-219 MHz band. *Id.* at 1:28-35. The network consists of "portable subscriber units of milliwatt transmitting power capacity," *id.* at 3:35-36, base stations capable of transmitting data to the subscriber units, *id.* at 3:62-65, and "receive only stations" that relay communications from the subscriber units to the base stations. *Id.* at 3:65-4:2.

Figure 2, below, illustrates an exemplary base station site. The base station 3 is located at the center of a local area territory, delineated by ring 19. *Id.* at 5:40-47. Subscriber units x 4, 4', etc are distributed throughout the local area territory. *Id.* at 5:54-6:4. As the subscriber units transmit at a lower power than the base station, remote receive-only relay stations 20A-20N are positioned

at strategic locations within the territory to relay communications from the subscriber units to the base station. *Id.*

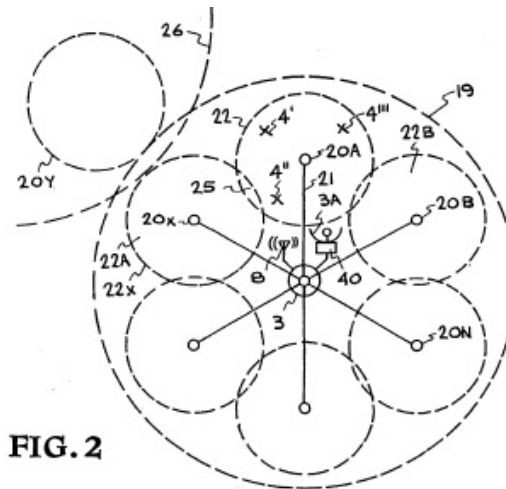


FIG. 2

Plaintiff asserts Defendant literally infringes claims 1-3, 8-9, and 12-20 of the '101 Patent, and infringes claims 4-7, 10 and 11 of the '101 Patent under the doctrine of equivalents. PL's BR. at 2. Plaintiff asserts Defendant literally infringes claims 1-3 and 5-14 of the '546 Patent and infringes claim 4 of the '546 Patent under the doctrine of equivalents. *Id.*

B. Disputed Terms

Term	Plaintiff's Proposed Construction	Defendant's Proposed Construction
interactive video network '101 Patent, Claims 1-15 '546 Patent, Claim 1	The preamble is not a claim limitations, but these terms mean:	The preambles serve as limitations - no further construction of these terms is required
interactive video network system '101 Patent, Claims 16-18 '546 Patent, Claims 2-13	system for implementing a communication service Alternate proposal: a two-way wireless communication system for use by a large number of subscribers that allows for substantially real-	Alternate proposal: FCC IVDS definition
interactive video data system '101 Patent, Claims 19-20		

	time communication or reporting	
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The parties dispute whether these terms, which appear only in claim preambles, are limitations. PL.’s BR. at 2. The dispute turns on whether the claims encompass transmission of data other than video. *Id.* at 3-7; DEF.’s RESP. at 4-7. Defendant argues the terms are limiting and, once that determination has been made, require no construction. DEF.’s RESP. at 5-6. Plaintiff argues the terms require construction, if they are found to be limiting, so as to clarify the claims are not limited to video applications. PL.’s REPLY at 3-4.

“[A] preamble is not limiting ‘where a patentee defines a structurally complete invention in the claim body and uses the preamble only to state a purpose or intended use for the invention.’” *Catalina Mktg. Int’l, Inc. v. Coolsavings.com, Inc.*, 289 F.3d 801, 808 (Fed. Cir. 2002). However, the preamble to a claim is “given the effect of a limitation” when it is “considered necessary to give life, meaning, and vitality to the claims.” *Kropa v. Robie*, 187 F.2d 150, 152 (C.C.P.A. 1951). Additionally, the preamble may be limiting where “a particular disputed preamble phrase” provides the antecedent basis for claim elements. *Catalina*, 289 F.3d at 808. “Likewise, when the preamble is essential to understand limitations or terms in the claim body, the preamble limits claim scope.” *Id.* Finally, the preamble is limiting when it is relied upon “during prosecution to distinguish the claimed invention from the prior art.” *Id.* “Without such reliance . . . a preamble generally is not limiting when the claim body describes a structurally complete invention.” *Id.* at 809.

The specific preamble phrases in dispute are not limiting because they recite a statement of use and do not provide antecedent basis for any element nor do they introduce necessary structure into the claim.

In Claim 1 of the ‘101 Patent, which is exemplary for the purposes of resolving this dispute, the allegedly limiting phrase is “interactive video network.” The claim recites:

A base station configuration in a two-way communication interactive video network having a network hub switching center for routing communications from and to a plurality of subscriber units at various geographic locations served by a base station that processes digital data modulated on an r-f carrier and transmitted from a plurality of subscriber units dispersed over a predetermined base station geographic area by presenting multiplexed digital data synchronously related to the base station broadcast signal for communication from identified individual subscriber units within designated geographic services areas

‘101 Patent at 11:20-31. Said another way: Claim 1 claims “[a] base station configuration in a two-way communication interactive video network.” *Id.* at 11:20-21. The network has “a network hub switching center” and “a plurality of subscriber units.” *Id.* at 11:21-23. The subscriber units belonging to the network are “dispersed over a predetermined base station geographic area,” *id.* at 11:26-27, and located “at various geographic locations served by a base station.” *Id.* at 11:23-24. The base station “processes digital data.” *Id.* at 11:24-25. This digital data has been “modulated on an r-f carrier and transmitted from a plurality of subscriber units.” *Id.* at 11:25-26. The network hub switching center “rout[es] communications from and to” the subscriber units “by presenting multiplexed digital data . . . for communication from identified individual subscriber units.” *Id.* at 11:22-30. Thus, the preamble describes the network in which the claimed base station configuration is intended to be used. *See Catalina*, 289 F.3d at 809 (observing “preambles describing the use of an invention generally do not limit the claims because the patentability of apparatus or composition claims depends on the claimed structure, not on the use or purpose of that structure”).

Additionally, the interactive video network phrase does not serve as the antecedent basis for an element in the claim body. The claim encompasses a base station configuration comprising “base station data processing and transmission facilities,” ‘101 Patent at 11:33, “base station reception means,” *id.* at 11:40, and “a set of local subscriber transceiver units.” *Id.* at 11:49. The base station transmits and receives digital data messages to and from local subscriber units. *Id.* at 11:33-39. Although the preamble describes these components as being part of the intended network for this base station configuration, the claim body independently sets forth a structurally complete invention. *See Catalina*, 289 F.3d at 808; *see also Schumer v. Lab. Computer Sys.*, 308 F.3d 1304, 1310 (Fed. Cir. 2002) (finding preamble not limiting “where the language of the preamble is superfluous”). Furthermore, the preamble does not provide an antecedent basis for nearly all of the claim elements. The only element that seemingly does rely on the claim preamble, “said base station geographic area,” ‘101 Patent at 11:43-44, is unrelated to the specific preamble phrase at issue – *i.e.*, the interactive video phrase. *See Bristol-Myers Squibb Co. v. Ben Venue Labs.*, 246 F.3d 1368, 1374-75 (Fed. Cir. 2001) (considering the limiting effect of preamble phrases independently). Finally, Defendants do not suggest the applicant relied on the preamble phrase during prosecution to distinguish prior art.

Further, “interactive video” does not restrict the base station configuration to use in a particular type of network. As discussed in more detail, *infra*, the claimed invention was directed towards utilizing the FCC’s 218-219 MHz band, which was referred to as “Interactive Video and Data Services.” Apparently, however, the FCC did not intend to limit the use of this band to interactive television. *See* 47 C.F.R. § 95.801 (1992). Like the inventor, which noted the use of low power subscriber units for applications such as meter reading and soft drink inventory monitoring,

the FCC recognized the possibility of other applications for low power subscriber units. FCC REPORT AND ORDER, May 16, 1996, WT Docket No. 95-47 at ¶ 12. Although the FCC would eventually rename the service to reflect the breadth of possible applications, the patents-in-suit were prosecuted while the service was still inaptly named. FCC 99-228, ORDER, MEMORANDUM OPINION AND ORDER AND NOTICE OF PROPOSED RULEMAKING, released Sept. 18, 1998. Nonetheless, the patents-in-suit were not directed to “interactive video,” or “interactive television.” Nothing in the body of the claim would restrict the claimed structure to a “video” system, and the preamble phrase does not provide any essential structure to the complete invention described in the claim body. Additionally, it is noted that the patent discusses uses for the invention that do not involve “video” systems. *See, e.g.*, ‘101 Patent at [57] (noting “monitoring of inventory, temperature, and other parameters for passive automatic alarm systems and the like, as well as active mobility of subscriber units for meter reading and the like is made possible with direct low-cost nationwide real time reporting capability”); *id.* at 6:5-8 (stating “this invention encourages such additional interactive services in the network as typified by meter reading, and inventory control in soft drink dispensing machines, etc.”). Furthermore, to the extent the preamble phrase provides context for the invention, it merely explains that the base station configuration was designed for use with an “interactive video” network, as it was understood by one of skill in the art of that day; that is, as a network operating on the 218-219 MHz band. This does not restrict the network to a television or “video” network. Moreover, this would still not change the preamble phrase into a limitation because such context still serves only to state an intended use. *Catalina*, 289 F.3d at 809.

The “interactive video” preamble phrases do not set forth essential structure of the invention, do not provide relevant antecedent bases, are unnecessary for understanding the limitations of the

claim, and were not relied upon during prosecution. Relying on these “guideposts,” *Catalina*, 289 F.3d at 808, the Court finds these preamble terms are not limiting and do not require further construction.

Term	Plaintiff’s Proposed Construction	Defendant’s Proposed Construction
base station data processing and transmission facilities <i>‘101 Patent, Claims 1-15</i>	<p>Plain and Ordinary Meaning, and this term is not governed by 35 U.S.C. § 112, ¶6.</p> <p>Alternate Proposal: If this term is to be construed according to 35 U.S.C. § 112, ¶ 6:</p> <p>Function: transmitting and receiving data messages</p> <p>Structure: local area repeater station, local base station repeater cell, cell base station, cell (3 in FIGS. 1, 2, 6A, 7A), cell site transmitter 8 (FIG. 2); 101[5:2-12]; 101[5:40-65]; 101[8:8-15]; 101[8:27-38]; 101[3:62-65]; 101[6:63-67]</p>	<p>This element should be construed according to 35 U.S.C. § 112, ¶6</p> <p>Function: transmitting to a set of local subscriber units and receiving from a subset of those local subscriber units multiplexed synchronously related digital data messages of variable lengths</p> <p>Structure: Cell base station [local area base station repeater cell] 3 (Figs. 1, 2, 6A, 7A), and communication protocols to the extent disclosed in Figs. 3, 4, 6B, 7B, 8A, 8B</p>

The parties dispute whether this is a means-plus-function term. Plaintiff contends this term is not subject to § 112, ¶ 6 and does not need construction. PL.’s BR. at 8. Plaintiff notes the term is presumptively not a means-plus-function claim because it does not use the word “means.” *Id.* Plaintiff further argues the claim language includes sufficient structure to overcome any challenge to that presumption. *Id.* at 9. Defendant asserts neither the phrase itself nor the rest of the claim language connotes structure to a person of ordinary skill in the art. DEF.’S RESP. at 7-8. Defendant

describes “facilities” as a nonce word and advocates construing the term as a means-plus-function term. *Id.* at 8-9.

This term is not governed by 35 U.S.C. § 112, ¶ 6. The paragraph presumptively does not apply because “base station data processing and transmission facilities” does not use “means.” *CCS Fitness, Inc. v. Brunswick Corp.*, 288 F.3d 1359, 1369 (Fed. Cir. 2002). Defendant “can rebut this presumption by demonstrating the claim term fails to recite sufficiently definite structure or else recites a function without reciting sufficient structure for performing that function.” *Id.* (internal quotation omitted). Generic terms “typically do not connote sufficiently definite structure.” *Mass. Inst. of Tech. v. Abacus Software*, 462 F.3d 1344, 1354 (Fed. Cir. 2006). However, “[c]laim language that further defines a generic term like ‘mechanism’ can sometimes add sufficient structure to avoid 112 ¶ 6.” *Id.* Plaintiff provides contemporaneous technical dictionaries defining “facilities, transmission” as a “[g]eneral term for equipment which acts as a bearer of information signals: . . . narrow and broadband radiocommunication systems.” PL.’S REPLY at EX. D. Additional structural is connoted by the adjacent claim language “base station data processing and transmission.” The McGraw-Hill Dictionary of Scientific and Technical Terms defines “base station,” in the field of communications, as “[a] land station, in the land mobile service, carrying on a service with land mobile stations (a base station may secondarily communicate with other base stations incident to communications with land mobile stations)” and as “[a] station in a land mobile system which remains in a fixed location and communicates with the mobile stations.” MCGRAW-HILL DICTIONARY OF SCIENTIFIC AND TECHNICAL TERMS 197 (5th ed. 1994). This definition is consistent with the applicant’s use of the term throughout the specification. *See, e.g.*, ‘101 Patent at 3:32-4:6 (describing the base station as transmitting and receiving messages to and from subscriber units).

Thus, one of ordinary skill in the art would have understood “base station data processing and transmission facilities” to connote structure adequate to “transmit[] . . . and receiv[e] . . . digital data messages.” Therefore, the Court finds this limitation is not governed by 35 U.S.C. § 112, ¶ 6.

Term	Plaintiff’s Proposed Construction	Defendant’s Proposed Construction
<p>base station data processing and transmission means <i>‘546 Patent, Claim 1</i></p> <p>data processing and transmission means <i>‘546 Patent, Claims 2-13</i></p>	<p>Plain and Ordinary Meaning, and this term is not governed by 35 U.S.C. § 112, 6.</p> <p>Alternate Proposal: If this element is to be construed according to 35 U.S.C. § 112, 6:</p> <p>Function: transmitting and receiving data messages</p> <p>Structure: local area repeater station, local base station repeater cell, cell base station, cell (3 in FIGS. 1, 2, 6A, 7A), cell site transmitter 8 (FIG. 2) ; 546[3:56 58]; 546[4:63 5:5]; 546[5:30 54]; 546[6:47-51]; 546[7:54-61]; 546[8:5-16]</p>	<p>This element should be construed according to 35 U.S.C. § 112, ¶ 6</p> <p>Function: transmitting to a set of said local subscriber units contained within said local base station geographic area associated with said local base station repeater cell means and receiving from a subset of said local set of subscriber units multiplexed synchronously related digital data messages of variable lengths</p> <p>Structure: Cell base station [local area base station repeater cell] 3 (Figs. 1, 2 6A, 7A) and communication protocols to the extent disclosed in Figs. 3, 4, 6B, 7B, 8A, 8B</p>

The parties dispute whether these are means-plus-function terms. PL.’s BR. at 11; DEF.’S RESP. at 10. Because these terms use the word “means,” Defendant argues they are presumptively means-plus-function terms. DEF.’S RESP. at 10. Plaintiff argues the claim language proves adequate structure to overcome this presumption. PL.’S BR. at 11. Defendant disagrees, stating the claim

language elaborates as to what is transmitted but does not disclose the structure for accomplishing the transmission. DEF.'S RESP. at 11.

Unlike the previous term, these terms “invoke a rebuttable presumption that § 112 ¶ 6 applies” because they use “means.” *CSS Fitness*, 288 F.3d at 1369. The presumption is overcome if “the claim recites sufficient structure for performing the described functions in their entirety.” *TriMed, Inc. v. Stryker Corp.*, 514 F.3d 1256, 1259 (Fed. Cir. 2008). As discussed, *supra*, “base station” possessed a well defined meaning in the art connoting structure for transmitting and receiving digital data messages, the function in both independent claims of the ‘546 Patent. The disputed terms must be read in the context of the entire patent. *Phillips*, 415 F.3d at 1314. In both independent claims the “base station data processing and transmission means,” ‘546 Patent at 10:65, and the “data processing and transmission means” are components further comprising a “base station repeater cell.” *See, e.g.*, ‘546 Patent at 11:35-36. A repeater is “[a]n amplifier or other device that receives weak signals and delivers corresponding strong signals with or without reshaping of waveforms,” MCGRAW-HILL DICTIONARY OF SCIENTIFIC AND TECHNICAL TERMS 1688 (5th ed. 1994), and a “repeater station,” *i.e.*, “repeater cell,” is simply “[a] station containing one or more repeaters.” MCGRAW-HILL DICTIONARY OF SCIENTIFIC AND TECHNICAL TERMS 1688 (5th ed. 1994). The specification uses these terms in accordance with their ordinary meaning – that is, it describes a base station repeater as relaying a data message to another cell for delivery. *See* ‘101 Patent at 4:16-21 (describing the base station relaying received messages to a switching hub for ultimate delivery to individual subscribers in remote base stations). Reception, data processing and transmission components are standard, essential elements of a repeater cell, as one of ordinary skill would understand the term. Thus, read in context, the terms connote structure adequate to perform

the transmission and receiving function.

Therefore, the Court finds these limitations are not governed by 35 U.S.C. § 112, ¶ 6.

Term	Plaintiff's Proposed Construction	Defendant's Proposed Construction
portable <i>'101 Patent, Claims 17, 19, 20</i> <i>'546 Patent, Claim 14</i>	Plain and Ordinary Meaning	Readily movable while operable to communicate

The parties disagree whether the claimed subscriber units must be operable while moving. PL.'S BR. at 13; DEF.'S RESP. at 13. Plaintiff argues the specification sets forth embodiments that do not require operation during transportation. PL.'S BR. at 13. Defendant contends the specification analogizes the mobility of the subscriber units to that of mobile phones, which are operable to communicate while moving. DEF.'S RESP. at 13. Plaintiff states such functionality is merely one embodiment. PL.'S BR. at 14; PL.'S REPLY at 7. Plaintiff argues Defendant's construction would exclude other disclosed embodiments where such functionality is absent. PL.'S REPLY at 7.

The specification does not use "portable" in a manner that requires a device to be "readily movable while operable to communicate." In some instances, the term is used to describe a device capable of operating while moving. For example, in the Background Art section, the specification refers to "portable telephone communication systems." '101 Patent at 1:68-2:1. However, the specification also uses the term where a device capable of operating while moving is not necessarily implied. *See, e.g., id.* at 6:27-30 (describing "[s]mall and portable home units are also possible. There is considerable advantage of longer battery life for portable units.") And in other instances, the disclosed embodiment is one which does not suggest operation while moving. *See, e.g., id.* at 1:40-43 (describing "battery powered, portable subscriber units, suitable for such functions as meter

reading”); *id.* at 6:5-8 (describing use of subscriber units for “meter reading, and inventory control in soft drink dispensing machines, etc.”). Thus, nothing in the specification suggests that the term was used in a way inconsistent with their plain and ordinary meaning – *i.e.*, “capable of being carried or moved about,” MERRIAN-WEBSTER’S COLLEGIATE DICTIONARY 907 (10th ed. 1999), or “capable of being easily and conveniently transported.” MCGRAW-HILL DICTIONARY OF SCIENTIFIC AND TECHNICAL TERMS 1550 (5th ed. 1994); *see also CSS Fitness*, 288 F.3d at 1366 (stating there is “a heavy presumption that a claim term carries its ordinary and customary meaning” (quotation omitted)). In some embodiments, these portable or mobile units may be operable while moving, but in other embodiments they are not. Thus, it would be improper to read such a limitation into the claims. *Vitronics Corp.*, 90 F.3d at 1583. Although Plaintiff maintains the terms are not synonymous, *see* PL.’s BR. at 1, it has not explained how the terms are meaningfully different.

Having resolved the parties’ claim scope dispute, the Court finds the term does not require construction because its meaning is clear in the context of the claims and will be readily understandable to the jury. *O2 Micro Int’l Ltd. v. Beyond Innovation Tech. Co.*, 521 F.3d 1351, 1362 (Fed. Cir. 2008); *Fenner Inv. Ltd. v. Microsoft Corp.*, No. 6:07-cv-8, 2008 WL 3981838, at *3 (E.D. Tex. Aug. 22, 2008) (finding a court need not construe a disputed term so long as it has resolved the claim scope dispute between the parties). Although the Court does not construe this term, the parties may not interpret this term in a manner that is inconsistent with this opinion.

Term	Plaintiff’s Proposed Construction	Defendant’s Proposed Construction
base station reception means <i>‘101 Patent, Claims 1-15</i>	Plain and Ordinary Meaning, and this term is not governed by 35 U.S.C. § 112, ¶6. Alternate Proposal	This element should be construed according to 35 U.S.C. § 112, ¶ 6

	<p>If this element is to be construed according to 35 U.S.C. § 112, ¶ 6:</p> <p>Function: receiving and processing data messages</p> <p>Structure: local area repeater station, local base station repeater cell, cell base station, cell (3 in FIGS. 1, 2, 6A, 7A); relay station(s) 20A 20N (FIG. 2); 22 22'(FIGS.6A, 7A); remote receiver(s) 20 20A (FIG. 1); cell site transmission system 40 (FIG. 2); switch control center 14 (FIG. 1); terminal directory 13 (FIG. 1); FIG. 1; 101[3:65-4:2]; 101[5:2-12, 28-65]; 101[7:60 64]</p>	<p>Function: receiving and processing data messages from the set of local subscriber units at that base station</p> <p>Structure: remote receivers 20AN or 22-22', each connected by a link 21 to a local area base station repeater cell [cell base station] 3 (Figs. 1-2, 6A and 7A), including the communication protocol to the extent disclosed in Figs. 3, 4, 6B, 7B, 8A, 8B</p>
<p>reception means '546 Patent, Claims 2-13</p>	<p>Plain and Ordinary Meaning, and this term is not governed by 35 U.S.C. § 112, ¶6.</p> <p>Alternate Proposal If this element is to be construed according to 35 U.S.C. § 112, ¶ 6:</p> <p>Function: receiving and processing and relaying data messages</p> <p>Structure: local area repeater station, local base station repeater cell, cell base station, cell (item 3 in FIG. 1, 2, 6A, 7A); relay station(s) 20A-20N (FIG. 2); 22 22'(FIG.6A, 7A); remote receiver(s) 20</p>	<p>This element should be construed according to 35 U.S.C. § 112, ¶ 6</p> <p>Function: receiving and processing said multiplexed synchronously related data messages from said at least one of said plurality of subscriber units and relaying said multiplexed synchronously related data messages from said at least one of said plurality of subscriber units to said base station repeater cell means</p> <p>Structure: remote receivers 20A-N or 22-22', each connected by a link 21 to a local area base station</p>

	20A (FIG. 1); cell site transmission system 40 (FIG. 2); switch control center 14 (FIG. 1); terminal directory 13 (FIG. 1); 546[7:38-43]; 546[3:58-63]; 546[4:63-5:5]; 546[5:18-54]	repeater cell [cell base station] 3 (Figs. 1-2, 6A and 7A), including the communication protocol to the extent disclosed in Figs. 3, 4, 6B, 7B, 8A, 8B
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The parties dispute whether these terms are governed by 35 U.S.C. § 112, ¶ 6. PL.’s BR. at 15; DEF.’s RESP. at 14. Although the terms are presumptively means-plus-function terms, Plaintiff contends they connote sufficient structure because one of ordinary skill in the art would understand them to be receivers. PL.’s BR. at 16-17. Defendant disagrees one of skill in the art would understand the terms to connote structure. DEF.’s RESP. at 14. Defendant concedes the claim language identifies placement of the claimed means, but argues it is silent as to what the means is. *Id.* at 15. If the terms are means-plus-function terms, the parties disagree both as to the function and the corresponding structure. PL.’s BR. at 17; DEF.’s RESP. at 14. Defendant argues Plaintiff’s proposals ignore that processing and receiving is performed at the base station and not elsewhere. DEF.’s RESP. at 14. Defendant additionally argues Plaintiff’s corresponding structure includes extraneous elements that are unnecessary to performing the claimed function. *Id.* Plaintiff argues Figures 1 and 2, and their accompanying text, completely describe the corresponding function and Defendant’s proposals improperly import unnecessary elements from other figures. PL.’s BR. at 17.

These terms are subject to § 112, ¶ 6. As noted in the discussion of “processing and transmission means” terms, “base station” connotes structure to one of ordinary skill in the art. However, the claimed reception means are unlike reception means one of ordinary skill in the art would generally associate with a “base station.” As noted in the Background Art section, “[t]here has been no known interactive video data service system available heretofore that has the capability

of servicing an assigned base station area with subscriber units transmitting in a milliwatt power range.” ‘101 Patent 1:36-39. An objective of the invention was to provide “two-way interactive communications with simplified low-cost subscriber units transmitting in milliwatt peak power ranges under parameters compatible with FCC licensing restrictions.” *Id.* at 3:19-21. Thus, the invention comprised not only “a central transmitter and data processing site” but also “[a] plurality of receive only stations distributed throughout the region and connected . . . to the central data processing site.” *Id.* at 3:62-68. The ordinary meaning of “base station” implied a single fixed communication and processing site, with which the “processing and transmission means” terms conformed, but would not include dispersed receivers as claimed by the “reception means” terms. Thus, although “base station” connotes some structure, it does not connote structure adequately supporting the claimed function here. Therefore, the terms as used in claims 1-15 of the ‘101 Patent and claim 2-13 of the ‘546 Patent are governed by 35 U.S.C. § 112, ¶ 6.

Defendant correctly identified the functions of the terms in the ‘101 and ‘546 Patents. The parties disagree as to the corresponding structure. Figures 1 and 2 depict “a set of subscribers at response units 4 communicat[ing] . . . to either a set of local remote receivers 20, each connected by a link 21 . . . to repeater cell 3, or to a local area base station repeater cell 3.” ‘101 Patent at 5:2-7. Local remote receivers 20A through 20N are likewise arranged. *Id.* at 5:54-62. The specification alternatively refers to the remote receivers as items 22 through 22' in Figures 6A and 7A, which describes the base station as a cell base station and cell, respectively. The set of local remote receivers 20 through 20N (Figs. 1, 2), 22 through 22' (Figs. 6A, 7A), and repeater cell, local are base station repeater cell, cell base station, cell 3 (collectively, “base station”) (Figs. 1, 2, 6A, 7A) perform the function of receiving and processing data messages from the local subscriber units. Local remote

receivers 20 through 20N (Figs. 1, 2), 22 through 22' (Figs. 6A, 7A), base station 3 (Figs. 1, 2, 6A, 7A), and link 21 (Figs. 2, 6A) perform the function of relaying the data messages to the base station repeater cell means. In its proposal, Defendant included link 21 and the communication protocols disclosed in Figures 3, 4, 6B, 7B, 8A, and 8B. Link 21 connects the remote receiver to the base station repeater cell, and is essential for relaying messages, but unnecessary for performing the receiving and processing function. Finally, the communication protocols are unrelated to either receiving messages from the subscriber units or to relaying the messages to the repeater cell. Plaintiff also identifies additional structures from Figure 1, which it describes are “additional structure for carrying out the functions associated with ‘reception means.’” PL.’s BR. at 17. These structures are dissociated from either the remote receivers or the base station. The functions here relate only to receiving data messages at a remote receiver and relaying that message to the base station. The various control and billing centers Plaintiff identifies, elements 2, 13, 14, 15, and 16 in Figure 1, are not part of that function, nor is cell site transmission system 40, which transmits to other base stations. Those elements may only be of relevance after a base station has already received a relayed message. Thus, the additional structure Plaintiff cites is unnecessary for performing those specific functions.

Accordingly, the function of the term in the ‘101 Patent is “receiving and processing data messages from the set of local subscriber units at that base station.” ‘101 Patent at 11:40-42. The corresponding structure is “remote receivers 20-20N (Figs. 1, 2), 22-22' (Figs. 6A, 7A), and repeater cell, local are base station repeater cell, cell base station, cell 3 (Figs. 1, 2, 6A, 7A), and statutory equivalents.” The functions of the term in the ‘546 Patent are “receiving and processing said multiplexed synchronously related data messages from said at least one of said plurality of subscriber

units and relaying said multiplexed synchronously related data messages from said at least one of said plurality of subscriber units to said base station repeater cell means.” ‘546 Patent at 11:44-49. The corresponding structure is “remote receivers 20-20N (Figs. 1, 2), 22-22' (Figs. 6A, 7A), and repeater cell, local are base station repeater cell, cell base station, cell 3 (Figs. 1, 2, 6A, 7A), link 21 (Figs. 2, 6A), and statutory equivalents.”

Term	Plaintiff’s Proposed Construction	Defendant’s Proposed Construction
base station broadcast signal <i>‘101 Patent, Claims 1-15</i> <i>‘546 Patent, Claim 1</i>	A wireless signal transmitted to a plurality of subscriber units and/or receivers	A wireless video signal transmitted from a base station to disseminate identical information to a plurality of subscriber units

The parties dispute primarily rests on whether the broadcast signal is restricted to video signals. PL.’S BR. at 18; DEF.’S RESP. at 16. In support of its position that the signal is not so limited, Plaintiff notes a reference to television broadcast signals was removed during prosecution. PL.’S BR. at 18-19. Defendant argues that, in obtaining this change, Plaintiff equated the “base station broadcast signal” to television broadcast signals. DEF.’S RESP. at 16. Plaintiff states to the contrary that this communication confirms the phrase “television signal,” which had as its antecedent basis “base station broadcast signal,” was intended to encompass more than simply video signals. PL.’S REPLY at 9. Plaintiff contends this conclusion is further supported by the applicant’s explanation to the PTO that the invention was broader than simply a video system. *Id.* Finally, Plaintiff contends claim differentiation calls for a broad interpretation because dependent claim 11 limits the signal to a television signal. *Id.* at 9-10. Secondly, the parties also dispute whether the

broadcast signal may be limited to one unit at a time. PL.’s BR. at 19. Defendant contends the signal must be broadcast to all units, even if it is intended for a single unit. DEF.’s RESP. at 17.

The patents-in-suit are not restricted to video applications. Throughout the specification, the applicant referenced video or television broadcast. *See, e.g.*, ‘101 Patent at 3:51-52 (describing synchronization with “television frames of a master TV channel”); *id.* at 5:46-47 (referring to the FCC’s “interactive video data service”). Despite these references, it is clear the patents-in-suit are broader than video or television transmission. *See, e.g.*, ‘101 Patent at 6:5-13 (disclosing use of invention for “meter reading, and inventory control in soft drink dispensing machines” and noting in such applications “subscriber units 4 may be provided without the necessity for video displays”). The video references stem from FCC’s original name for short distance transmission on the 218-219 MHz band. *See id.* at 3:6-16 (explaining “[i]t is an objective of this invention to improve the state of the art by effectively using licensed interactive communication channels” and describing requirements of “the FCC licensing conditions for interactive video data service”); *id.* at 4:2-6 (stating “the base station serves a gridwork of receiver sub-cell sites distributed at locations permitting reliable response by subscribers transmitting with milliwatt digital signal levels in the FCC authorized 218-219 MHz band”). However, the FCC did not limit the Interactive Video and Data Service (“IVDS”) to television or video broadcast, acknowledging its utility as “a short distance communications service.” 47 C.F.R. § 95.801 (1992). Indeed, “the 218-219 MHz band is insufficient for the transmission of conventional full-motion video,” FCC 218-219 MHz RADIO SERVICE, available at http://wireless.fcc.gov/services/index.htm?job=service_home&id=218_219, and the FCC rejected a request to limit IVDS to video applications, noting it was adaptable to “providing video, voice, or data” and that it “envision[ed] a variety of uses for IVDS.” FCCREPORT

AND ORDER, May 16, 1996, WT Docket No. 95-47 at ¶ 12. In 1998, the FCC “[r]edesignate[d] this service as the ‘218-219 MHz Service’ to reflect the breadth of services evolving in this spectrum.” FCC 99-228, ORDER, MEMORANDUM OPINION AND ORDER AND NOTICE OF PROPOSED RULEMAKING, released Sept. 17, 1998. Thus, although the specification frequently refers to video, the claimed invention is not so limited.

Furthermore, the specification and the prosecution history distinguish between a “broadcast signal” and a “television signal.” The specification describes a broadcast signal as including signals other than a video or television signal. ‘101 Patent at 6:63-68 (describing a ringing signal for activating a unit); *id.* at 7:3-5 (describing a control signal). Likewise, restricting a broadcast signal to a video or television signal would exclude preferred embodiments. *See, e.g., id.* at 1:40-43 (describing “battery powered, portable subscriber units, suitable for such functions as meter reading”); *id.* at 6:5-8 (describing use of subscriber units for “meter reading, and inventory control in soft drink dispensing machines, etc.”). The applicant similarly distinguished the claimed invention from a system restricted to television signals, stating in response to an office action “the Martinez reference specifically disclose[s] transmitting data messages which are integral with a conventional television signal. Such is not the case in the present invention.” OFFICE ACTION RESPONSE, Dec. 12, 1994, at 4. Finally, dependent claim 11 specifically limits the broadcast signal to a television signal, indicating a broadcast signal is broader. *See Nazomi Commc’n, Inc. v. Arm Holdings, PLC*, 403 F.3d 1364, 1370 (Fed Cir. 2005) (observing “[t]he concept of claim differentiation normally means that limitations stated in dependent claims are not to be read into the independent claim from which they depend” (quotation omitted)).

Finally, a broadcast signal may be intended for a specific subscriber unit, but it must be broadcast to all units. This is inherent in the term, as the claim language specifically describes the signal as a broadcast signal, as opposed to a multicast or unicast signal. Any given message transmitted by the base station to a subscriber unit is sent to all units. This does not foreclose sending a given message for a specific subscriber unit or units, *see* ‘101 Patent at 7:34-37 (describing addressing messages to specific units), but even a message intended for a specific unit is transmitted to all subscriber units within the base station geographic area.

Therefore, the Court construes this term as “a wireless signal transmitted to a plurality of subscriber units and/or receivers.”

Term	Plaintiff’s Proposed Construction	Defendant’s Proposed Construction
synchronously related <i>‘101 Patent, Claims 1-15</i> <i>‘546 Patent, Claims 1-14</i>	Related in time and/or frequency (which is the Plain and Ordinary Meaning)	Transmitted during response or blanking intervals of [base station broadcast signal] Indefinite in claims 546:2-13

Defendant argues the term only relates to synchronization with television blanking signals, whereas Plaintiff argues the term may refer to synchronizing in time of transmission or signal frequency. DEF.’S RESP. at 18; PL.’S BR. at 20. Defendant states the patents-in-suit rely on and are limited to a message protocol disclosed in the Morales patent, which described a system where messages were sent during television blanking signals. DEF.’S RESP. at 18. Plaintiff argues Defendant is simply importing a limitation for a specific embodiment, to the exclusion of other disclosed embodiments. PL.’S BR. at 21; PL.’S REPLY at 11-12. Defendant contends any such other embodiments were not claimed in the patents-in-suit. DEF.’S RESP. at 19. The parties also submitted

supplemental argument based on a post-*Markman* deposition of the inventor, wherein each contends the deposition testimony further confirms their preferred proposal.

The claimed invention is not restricted to the protocol disclosed in the Morales patent. To the extent the parties' arguments turn on whether the broadcast signal is a television signal, the Court has resolved the issue for the reasons explained when discussing the "interactive video" and "broadcast signal" terms. The specification uses the "synchronous" and related words to discuss not only synchronization with a television signal, '101 Patent 3:50-52, but also speaks of "communications and switching connections [that] are synchronized throughout a nationwide network." *Id.* at 3:52-54. This suggests synchronization is not necessarily limited to blanking intervals. Although the specification refers to the Morales patent during its discussion of synchronization, *see id.* at 7:43-53 (citing the Morales patent), the discussion primarily served to distinguish the invention "from any former telephone switching system art which is asynchronously switched." *Id.* at 7:53-55. In sum, while Defendant's proposal encompasses one of the disclosed embodiments, it is unnecessarily limiting. Accordingly, the Court adopts Plaintiff's proposal and construes this term as "related in time and/or frequency."

Term	Plaintiff's Proposed Construction	Defendant's Proposed Construction
means for providing for two-way digital communications between two different subscriber units <i>'101 Patent, Claims 16-18</i>	<p>Plain and Ordinary Meaning, and this term is not governed by 35 U.S.C. § 112, ¶6.</p> <p>Alternate Proposal If this element is to be construed according to 35 U.S.C. § 112, ¶ 6:</p> <p>Function: providing for</p>	<p>This element should be construed according to 35 U.S.C. § 112, ¶ 6</p> <p>Function: providing for two-way digital communications between two different subscriber units</p> <p>Structure: a serial</p>

	<p>two-way digital communications</p> <p>Structure: local area repeater station, local base station repeater cell, cell base station, cell (item 3 in FIG. 1, 2, 6A, 7A); satellite 1 (FIG. 1); VSAT 44 (FIG. 5); control center 2 (FIG. 1); switching control center 14 (FIG. 1); cell site transmitter 8 (FIG. 2); 101[5:2-12, 28-53]; 101[6:63-67]</p>	<p>communication path from subscriber units 4, 4', 4'', or 4''' (Figs. 1, 2, 6A, 7A, 9A) connected to remote receivers 20A-N or 22-22', each connected by a link 21 to a local area base station repeater cell [cell base station] 3, which is connected to satellite 1 to audience control and data center 2 back to satellite 1 to another base station to a different subscriber unit, and utilizing the communication protocols to the extent disclosed in Figs. 3, 4, 6B, 7B, 8A, 8B</p>
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Plaintiff contends the claim language recites enough structure to overcome the presumption this is a means-plus-function term. PL.'s BR. at 22. Defendant argues the claim language does not recites structure because it does not disclose how the communications path is implemented. DEF.'s RESP. at 21. Plaintiff disagrees with this characterization, contending the structure described by the claim language is identical to the structure Defendant proposes as corresponding structure if the term is construed pursuant to § 112, ¶ 6. PL.'s REPLY at 12.

Although the claim uses "means," the claim includes sufficient structure to avoid construction as a means-plus-function term. Claim 16 of the '101 Patent, which is exemplary of the usage of this term, recites:

means for providing for two-way digital communications between two different subscriber units by a serial communication path extending through a base station, the satellite, the central station, the satellite and back to a base station, wherein at least some of said base stations serve a set of subscriber units dispersed over a predetermined geographic area and comprise communication means

between the subscriber units with the base station including a set of station receive only terminals remote from the base station coupled by a communication link with the base station for conveying transmitted messages from subscriber units in the subdivided portion of said geographic area in the vicinity of the receive only terminals to the base station

‘101 Patent at 13:5-19. Where, as here, “a claim recites a function, but then goes on to elaborate sufficient structure, material, or acts within the claim itself to perform entirely the recited function, the claim is not in means-plus-function format.” *Sage Products, Inc. v. Devon Indus., Inc.*, 126 F.3d 1420, 1427-28 (Fed. Cir. 1997). Accordingly, the Court finds this limitation is not governed by 35 U.S.C. § 112, ¶ 6.

Term	Plaintiff’s Proposed Construction	Defendant’s Proposed Construction
facilities for communicating from the subscriber units when moved through different geographic zones <i>‘101 Patent, Claims 19-20</i>	<p>Plain and Ordinary Meaning, and this term is not governed by 35 U.S.C. § 112, ¶6.</p> <p>Alternate Proposal § 112, ¶ 6:</p> <p>Function: communicating</p> <p>Structure: software and control facilities; software and control data processor 54 (FIG. 9A); 101[10:21-28]; transceiver 50 (FIG. 9A); transceiver 4 (FIG. 2); software in subscriber unit (item 17, FIG. 1); 101[8:15-62, 9:14-19]</p>	<p>This element should be construed according to 35 U.S.C. § 112, ¶ 6</p> <p>Function: communicating from the subscriber units when moved through different geographic zones</p> <p>Structure: Subscriber units 4, 4’, 4’’, or 4''' (Figs. 1, 2, 6A, 7A, 9A), including software control facilities or Software Control Data Processor 54 and the corresponding set-up algorithm to the extent disclosed in Fig. 6B and 8:15-62, 9:14-19</p>

Plaintiff argues this is not a means-plus-function term and it does not require construction.

PL.’s BR. at 23-24. Although the term is presumptively not a means-plus-function term because it

does not use the word “means,” Defendant argues this presumption is overcome because neither the term itself nor the rest of the claim language connote structure for performing the function. DEF.’S RESP. at 22-23. Defendant further argues the corresponding structure is an algorithm because this is a software term. *Id.* Plaintiff contends Defendant’s proposed algorithm is overly broad, encompassing a handing off procedure that asserts appears later in the claim and is not part of the communicating function. PL.’S REPLY at 12.

Although the claim does not use “means,” the use of “facilities” here is inadequate to connote structure capable of performing the claimed function. As the Court previously observed, generic terms “typically do not connote sufficiently definite structure.” *Mass. Inst. of Tech.*, 462 F.3d at 1354. Unlike “base station facilities,” the claim language does not “further define[] a generic term . . . [to] add sufficient structure to avoid 112 ¶ 6.” *Cf. id.* Plaintiff’s dictionary defines “facilities, transmission” as a “[g]eneral term for equipment which acts as a bearer of information signals: . . . narrow and broadband radiocommunication systems.” PL.’S REPLY at EX. D. Without further context, “facilities” is essentially a nonce word encompassing virtually anything from performing the recited function. Thus, this is a means-plus-function term.

Defendant correctly identifies the claimed function. The parties’ disagreement as to corresponding structure relates primarily to whether the function necessitates the set-up algorithm depicted in Figure 6 and discussed at length in column 8. Plaintiff contends the set-up algorithm is not part of the function of “communicating.” The specification explicitly states the algorithm depicted in Figure 6B “relate[s] to the communication sequences . . . between home units 4, the cell site utilizing local base station 3 and local remote stationary receivers 20A-20N.” ‘101 Patent at 8:8-12. Although Plaintiff accurately notes the hand-off procedure is separately claimed in independent

claim 20, the set-up algorithm cannot be divorced from the communication function recited in both claims 19 and 20. “This set up procedure is important for ‘hand-off’ of a portable unit from one stationary local remote receiver site 22 to another as fringe areas are encountered,” *id.* at 8:63-65, *i.e.*, the set-up algorithm is important when communicating from subscriber units moving through different geographic zones. This important procedure would be lacking from claim 20 if it was not incorporated in the communication function. Therefore, the Court adopts Defendant’s corresponding structure and defines the function as “communicating from the subscriber units when moved through different geographic zones” and defines the corresponding structure as “Subscriber units 4, 4’, 4’’, or 4’’’ (Figs. 1, 2, 6A, 7A, 9A), including software control facilities or Software Control Data Processor 54 and the corresponding set-up algorithm to the extent disclosed in Fig. 6B and ‘101 Patent 8:15-62, 9:14-19, and statutory equivalents.”

Term	Plaintiff’s Proposed Construction	Defendant’s Proposed Construction
means for transmitting digital data derived by said transducers <i>‘101 Patent, Claim 19</i>	<p>Plain and Ordinary Meaning, and this term is not governed by 35 U.S.C. § 112, ¶6.</p> <p>If this element is to be construed according to 35 U.S.C. § 112, ¶ 6:</p> <p>Function: transmitting digital data</p> <p>Structure: transceiver 50 (FIG. 9A) 101[10:9-13]; transceiver 4 (FIG. 2) 101[5:59-66]</p>	<p>This element should be construed according to 35 U.S.C. § 112, ¶ 6</p> <p>Function: transmitting digital data derived by said transducers</p> <p>Structure: Software control data processor 54, output register fixed variable 52, frequency control 57, transceiver 50 and antenna 49 (Fig. 9A), including communication protocols and algorithms to the extent disclosed in Figs. 3, 4, 6B,</p>

		7B, 8A, 8B and at 8:8-62
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Plaintiff states the claim language connotes structure, a transmitter, and does not require further construction. PL.'S BR. at 24. Defendant argues this is an unsubstantiated legal conclusion and urges the Court to construe the term pursuant to § 112, ¶ 6. DEF.'S RESP. at 24-25. If construed as a means-plus-function term, Plaintiff contends the corresponding structure is simply a transceiver. PL.'S BR. at 24. Plaintiff argues Defendant's proposal improperly includes unnecessary structure. *Id.* Defendant defends its construction, stating its proposal merely includes structural components depicted in Figure 9. DEF.'S RESP. at 25. Plaintiff argues the disclosure of "ancillary elements" in Figure 9 does not compel their inclusion in the definition of corresponding structure. PL.'S REPLY at 13-14.

This term is presumptively a means-plus-function term and Plaintiff fails to overcome this presumption. Defendant correctly identifies the function of "transmitting digital data derived by said transducers." Defendant's proposal of corresponding structure, however, unnecessarily incorporates structure unrelated to transmitting. Defendant identifies several components from Figure 9 "all connected to transceiver 50." DEF.'S RESP. at 25. However, it does not necessarily follow that every component connected to some corresponding structure is also involved in the claimed function. The additional components may play a role in generating the "digital data derived by said transducers," but the claimed function is simply transmitting that data, however generated or whatever the source. Plaintiff's proposal correctly limits the corresponding structure to only those elements that are essential, yet adequate, to performing the function. Therefore, the Court defines the corresponding

structure as “transceiver 50 (FIG. 9A) as described at ‘101 Patent 10:9-13 and transceiver 4 (FIG. 2) as described at ‘101 Patent 5:59-66, and statutory equivalents.”

Term	Plaintiff’s Proposed Construction	Defendant’s Proposed Construction
remote receiver <i>‘546 Patent, Claim 1</i>	Plain and Ordinary Meaning Alternate Proposal A receiver remote from or collocated with a transmitter, base station, and/or repeater	Equipment located in subdivided portions of a base station’s geographic area to relay transmissions from subscriber units to the base station
receive only stations <i>‘101 Patent, Claim 20</i>	Plain and Ordinary Meaning Alternate Proposal A receiver for receiving transmissions	Equipment located in subdivided portions of a base station’s geographic area to relay transmissions from subscriber units to the base station
receive only digital receiver <i>‘546 Patent, Claim 14</i>	Plain and Ordinary Meaning Alternate Proposal A receiver for receiving and relaying digital communications	Equipment located in subdivided portions of a base station’s geographic area to relay transmissions from subscriber units to the base station

Plaintiff and Defendant dispute whether the construction of these terms should include a reference to the equipment’s physical location. PL.’s BR. at 26; DEF.’s RESP. at 26-27. Defendant contends location is important to the interpretation of the claim. DEF.’s RESP. at 26-27. Plaintiff argues the inclusion of location in Defendant’s proposal is redundant because the claim language recites it. PL.’s REPLY at 14. Plaintiff also argues Defendant’s construction improperly excludes communication from a subscriber unit to a base station by way of a collocated remote receiver. PL.’s BR. at 27.

Each of the relevant claims includes location language making Defendant's location language redundant and unnecessary. *See* '101 Patent at 14:42-45 ("a base station of defined geographic area for serving a set of said subscriber units, said area is subdivided into a plurality of zones, and receive only stations located in said zones"); '546 Patent at 10-12 ("a local remote receiver disposed within one of a plurality of cell subdivision site[s] partitioned from said local base station geographic area"); '546 Patent at 14:2-3 ("a set of receive only digital receivers positioned in said subdivided zones"). Plaintiff is correct the invention encompasses a "remote receiver" collocated with a local area repeater station. *See* '101 Patent at Fig. 1. Therefore, the Court adopts Plaintiff's proposed constructions and construes "remote receiver" as "a receiver remote from or collocated with a transmitter, base station, and/or repeater;" "receive only stations" as "a receiver for receiving transmissions;" and "receive only digital receiver" as "a receiver for receiving and relaying digital communications."

Term	Plaintiff's Proposed Construction	Defendant's Proposed Construction
facilities in said base station and subscriber units for handing off communications between zones when communicated signals deteriorate below a given threshold <i>'101 Patent, Claim 20</i>	<p>Plain and Ordinary Meaning, and this term is not governed by 35 U.S.C. § 112, ¶6.</p> <p>If this element is to be construed according to 35 U.S.C. § 112, ¶ 6:</p> <p>Function: handing off communications</p> <p>Structure: local area repeater station, local base station repeater cell, cell base station, cell (item 3</p>	<p>This element should be construed according to 35 U.S.C. § 112, ¶ 6</p> <p>Function: handing off communications between zones when communicated signals deteriorate below a given threshold</p> <p>Structure: Fig. 6B, 8:8-9:30 (describing receive signal strength indicators (RSSI) located in the base stations and subscriber units)</p> <p>***</p>

	in FIG. 1, 2, 6A, 7A); software control facilities; 101[5:28-31]; software control data processor 54 (FIG. 9A); transceiver 50 (FIG. 9A); transceiver 4 (FIG. 2) software at SU (item 17 in FIG. 1); 101[8:8-9:44]; FIG. 6B; response unit 4 (FIG. 1); remote receiver (FIG. 6B)	<p>If the Court concludes that this term should not be construed according to 35 U.S.C. § 112, ¶ 6, this term should be construed as:</p> <p>Receive signal strength indicators (RSSI) located in the base station and subscriber units</p>
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Plaintiff argues this is not a means-plus-function term. PL.'s BR. at 28. Plaintiff notes the term does not use "means" and argues the claim language recites sufficient structure to rebut any challenge to that presumption § 112, ¶ 6 is inapplicable. *Id.* at 29. Defendant argues the term has no accepted meaning and would not connote structure to of ordinary skill in the art. DEF.'S RESP. at 28. Although Plaintiff alternatively proposes a function and corresponding structure, PL.'s BR. at 29, Defendant argues they are inadequate and incomplete because they fail to encompass the system's set up and hand off procedures. DEF.'S RESP. at 28. Plaintiff argues Defendant's proposal is improperly limits the "threshold" test to signal strength. PL.'S BR. at 30; PL.'S REPLY at 15. Defendant states the specification does not support testing on alternate criteria. DEF.'S RESP. at 29.

This is a means-plus-function term because "facilities" is used as a nonce word to represent virtually anything. Unlike "facilities for communicating," this term does have some base station context, akin to the context provided in "transmission and processing facilities." However, unlike the transmission and processing facilities, where the facilities were components of the base station, here the facilities are simply located in a base station. The facilities here are not basic, essential elements of a base station as one of ordinary skill would understand that word to include. Indeed, the specification enters into a lengthy discussion of how this complex function of handing off is

performed. *See* ‘101 Patent at 8:8-9:44. Thus, the presumption that this is not a means-plus-function term is overcome.

Defendant properly identifies the claimed function. As noted, the specification discusses the hand-off and associated set-up procedures in Columns 8 and 9. The relevant figures and components include those Plaintiff identified. The parties further dispute whether this disclosure restricts the hand-off determination to depend on receive signal strength indicators (RSSI). The specification states a RSSI “measurement may serve as a criterion for hand-off,” ‘101 Patent at 9:8-9, indicating RSSI is not the only, nor even a necessary, criterion for hand-off. The specification does not, however, provide support for or examples of any other criterion. Therefore, the Court combines Defendant’s proposed structure with Plaintiff’s and defines the corresponding structure as “local area repeater station, local base station repeater cell, cell base station, cell (item 3 in FIG. 1, 2, 6A, 7A); software control facilities as described at ‘101 Patent 5:28-31; software control data processor 54 (FIG. 9A); transceiver 50 (FIG. 9A); transceiver 4 (FIG. 2) software at SU (item 17 in FIG. 1); the description at ‘101 Patent 8:8-9:44; FIG. 6B; response unit 4 (FIG. 1); remote receiver (FIG. 6B), and statutory equivalents.”

CONCLUSION

For the foregoing reasons, the Court adopts the constructions set forth above. For the ease of reference, the Court’s claim interpretations are set forth in a table attached to this order.

So ORDERED and SIGNED this 11th day of August, 2010.


 JOHN D. LOVE
 UNITED STATES MAGISTRATE JUDGE

APPENDIX

Term	Plaintiff's Proposed Construction	Defendant's Proposed Construction	Court's Construction
<p>interactive video network <i>'101 Patent, Claims 1-15</i> <i>'546 Patent, Claim 1</i></p> <p>interactive video network system <i>'101 Patent, Claims 16-18</i> <i>'546 Patent, Claims 2-13</i></p> <p>interactive video data system <i>'101 Patent, Claims 19-20</i></p>	<p>The preamble is not a claim limitations, but these terms mean:</p> <p>system for implementing a communication service</p> <p>Alternate proposal: a two-way wireless communication system for use by a large number of subscribers that allows for substantially real-time communication or reporting</p>	<p>The preambles serve as limitations - no further construction of these terms is required</p> <p>Alternate proposal: FCC IVDS definition</p>	<p>No Construction Necessary</p>
<p>base station data processing and transmission facilities <i>'101 Patent, Claims 1-15</i></p>	<p>Plain and Ordinary Meaning, and this term is not governed by 35 U.S.C. § 112, ¶6.</p> <p>Alternate Proposal: If this term is to be construed according to 35 U.S.C. § 112, ¶ 6:</p> <p>Function: transmitting and receiving data messages</p>	<p>This element should be construed according to 35 U.S.C. § 112, ¶6</p> <p>Function: transmitting to a set of local subscriber units and receiving from a subset of those local subscriber units multiplexed synchronously related digital data messages of variable lengths</p>	<p>No Construction Necessary</p>

	Structure: local area repeater station, local base station repeater cell, cell base station, cell (3 in FIGS. 1, 2, 6A, 7A), cell site transmitter 8 (FIG. 2); 101[5:2-12]; 101[5:40-65]; 101[8:8-15]; 101[8:27-38]; 101[3:62-65]; 101[6:63-67]	Structure: Cell base station [local area base station repeater cell] 3 (Figs. 1, 2, 6A, 7A), and communication protocols to the extent disclosed in Figs. 3, 4, 6B, 7B, 8A, 8B	
base station data processing and transmission means <i>'546 Patent, Claim 1</i> data processing and transmission means <i>'546 Patent, Claims 2-13</i>	<p>Plain and Ordinary Meaning, and this term is not governed by 35 U.S.C. § 112, 6.</p> <p>Alternate Proposal: If this element is to be construed according to 35 U.S.C. § 112, 6:</p> <p>Function: transmitting and receiving data messages</p> <p>Structure: local area repeater station, local base station repeater cell, cell base station, cell (3 in FIGS. 1, 2, 6A, 7A), cell site transmitter 8 (FIG. 2) ; 546[3:56 58]; 546[4:63 5:5]; 546[5:30 54]; 546[6:47-51];</p>	<p>This element should be construed according to 35 U.S.C. § 112, ¶ 6</p> <p>Function: transmitting to a set of said local subscriber units contained within said local base station geographic area associated with said local base station repeater cell means and receiving from a subset of said local set of subscriber units multiplexed synchronously related digital data messages of variable lengths</p> <p>Structure: Cell base station [local area base station repeater cell] 3 (Figs. 1, 2 6A, 7A) and communication protocols to the extent</p>	No Construction Necessary

	546[7:54-61]; 546[8:5-16]	disclosed in Figs. 3, 4, 6B, 7B, 8A, 8B	
portable <i>'101 Patent, Claims 17, 19, 20</i> <i>'546 Patent, Claim 14</i>	Plain and Ordinary Meaning	Readily movable while operable to communicate	No Construction Necessary
base station reception means <i>'101 Patent, Claims 1-15</i>	<p>Plain and Ordinary Meaning, and this term is not governed by 35 U.S.C. § 112, ¶6.</p> <p>Alternate Proposal</p> <p>If this element is to be construed according to 35 U.S.C. § 112, ¶ 6:</p> <p>Function: receiving and processing data messages</p> <p>Structure: local area repeater station, local base station repeater cell, cell base station, cell (3 in FIGS. 1, 2, 6A, 7A); relay station(s) 20A 20N (FIG. 2); 22 22'(FIGS.6A, 7A); remote receiver(s) 20 20A (FIG. 1); cell site transmission system 40 (FIG. 2); switch control center 14 (FIG. 1); terminal directory 13 (FIG. 1); FIG. 1; 101[3:65-4:2]; 101[5:2-12,</p>	<p>This element should be construed according to 35 U.S.C. § 112, ¶ 6</p> <p>Function: receiving and processing data messages from the set of local subscriber units at that base station</p> <p>Structure: remote receivers 20AN or 22-22', each connected by a link 21 to a local area base station repeater cell [cell base station] 3 (Figs. 1-2, 6A and 7A), including the communication protocol to the extent disclosed in Figs. 3, 4, 6B, 7B, 8A, 8B</p>	<p>Function: receiving and processing data messages from the set of local subscriber units at that base station</p> <p>Structure: remote receivers 20-20N (Figs. 1, 2), 22-22' (Figs. 6A, 7A), and repeater cell, local are base station repeater cell, cell base station, cell 3 (Figs. 1, 2, 6A, 7A), and statutory equivalents.</p>

	28-65]; 101[7:60 64]		
reception means <i>'546 Patent, Claims 2-13</i>	<p>Plain and Ordinary Meaning, and this term is not governed by 35 U.S.C. § 112, ¶6.</p> <p>Alternate Proposal If this element is to be construed according to 35 U.S.C. § 112, ¶ 6:</p> <p>Function: receiving and processing and relaying data messages</p> <p>Structure: local area repeater station, local base station repeater cell, cell base station, cell (item 3 in FIG. 1, 2, 6A, 7A); relay station(s) 20A-20N (FIG. 2); 22 22'(FIG.6A, 7A); remote receiver(s) 20 20A (FIG. 1); cell site transmission system 40 (FIG. 2); switch control center 14 (FIG. 1); terminal directory 13 (FIG. 1); 546[7:38-43]; 546[3:58-63]; 546[4:63-5:5]; 546[5:18-54]</p>	<p>This element should be construed according to 35 U.S.C. § 112, ¶ 6</p> <p>Function: receiving and processing said multiplexed synchronously related data messages from said at least one of said plurality of subscriber units and relaying said multiplexed synchronously related data messages from said at least one of said plurality of subscriber units to said base station repeater cell means</p> <p>Structure: remote receivers 20A-N or 22-22', each connected by a link 21 to a local area base station repeater cell [cell base station] 3 (Figs. 1-2, 6A and 7A), including the communication protocol to the extent disclosed in Figs. 3, 4, 6B, 7B, 8A, 8B</p>	<p>Function: receiving and processing said multiplexed synchronously related data messages from said at least one of said plurality of subscriber units and relaying said multiplexed synchronously related data messages from said at least one of said plurality of subscriber units to said base station repeater cell means.</p> <p>Structure: remote receivers 20-20N (Figs. 1, 2), 22-22' (Figs. 6A, 7A), and repeater cell, local are base station repeater cell, cell base station, cell 3 (Figs. 1, 2, 6A, 7A), link 21 (Figs. 2, 6A), and statutory equivalents</p>

base station broadcast signal <i>'101 Patent, Claims 1-15</i> <i>'546 Patent, Claim 1</i>	A wireless signal transmitted to a plurality of subscriber units and/or receivers	A wireless video signal transmitted from a base station to disseminate identical information to a plurality of subscriber units	A wireless signal transmitted to a plurality of subscriber units and/or receivers.
synchronously related <i>'101 Patent, Claims 1-15</i> <i>'546 Patent, Claims 1-14</i>	Related in time and/or frequency (which is the Plain and Ordinary Meaning)	Transmitted during response or blanking intervals of [base station broadcast signal] Indefinite in claims 546:2-13	Related in time and/or frequency
means for providing for two-way digital communications between two different subscriber units <i>'101 Patent, Claims 16-18</i>	<p>Plain and Ordinary Meaning, and this term is not governed by 35 U.S.C. § 112, ¶6.</p> <p>Alternate Proposal If this element is to be construed according to 35 U.S.C. § 112, ¶ 6:</p> <p>Function: providing for two-way digital communications</p> <p>Structure: local area repeater station, local base station repeater cell, cell base station, cell (item 3 in FIG. 1, 2, 6A, 7A); satellite 1 (FIG. 1); VSAT 44 (FIG. 5); control center 2 (FIG. 1);</p>	<p>This element should be construed according to 35 U.S.C. § 112, ¶ 6</p> <p>Function: providing for two-way digital communications between two different subscriber units</p> <p>Structure: a serial communication path from subscriber units 4, 4', 4'', or 4''' (Figs. 1, 2, 6A, 7A, 9A) connected to remote receivers 20A-N or 22-22', each connected by a link 21 to a local area base station repeater cell [cell base station] 3, which is connected to satellite 1 to audience control and data</p>	No Construction Necessary

	switching control center 14 (FIG. 1); cell site transmitter 8 (FIG. 2); 101[5:2-12, 28-53]; 101[6:63-67]	center 2 back to satellite 1 to another base station to a different subscriber unit, and utilizing the communication protocols to the extent disclosed in Figs. 3, 4, 6B, 7B, 8A, 8B	
facilities for communicating from the subscriber units when moved through different geographic zones <i>'101 Patent, Claims 19-20</i>	<p>Plain and Ordinary Meaning, and this term is not governed by 35 U.S.C. § 112, ¶6.</p> <p>Alternate Proposal § 112, ¶ 6 : Function: communicating</p> <p>Structure: software and control facilities; software and control data processor 54 (FIG. 9A); 101[10:21-28]; transceiver 50 (FIG. 9A); transceiver 4 (FIG. 2); software in subscriber unit (item 17, FIG. 1); 101[8:15-62, 9:14-19]</p>	<p>This element should be construed according to 35 U.S.C. § 112, ¶ 6</p> <p>Function: communicating from the subscriber units when moved through different geographic zones</p> <p>Structure: Subscriber units 4, 4', 4'', or 4''' (Figs. 1, 2, 6A, 7A, 9A), including software control facilities or Software Control Data Processor 54 and the corresponding set-up algorithm to the extent disclosed in Fig. 6B and 8:15-62, 9:14-19</p>	<p>Function: communicating from the subscriber units when moved through different geographic zones</p> <p>Structure: subscriber units 4, 4', 4'', or 4''' (Figs. 1, 2, 6A, 7A, 9A), including software control facilities or Software Control Data Processor 54 and the corresponding set-up algorithm to the extent disclosed in Fig. 6B and '101 Patent 8:15-62, 9:14-19, and statutory equivalents.</p>
means for transmitting digital data derived by said	Plain and Ordinary Meaning, and this term is not governed	This element should be construed according to 35	Function: transmitting digital data derived by said

transducers <i>'101 Patent, Claim 19</i>	<p>by 35 U.S.C. § 112, ¶6.</p> <p>If this element is to be construed according to 35 U.S.C. § 112, ¶ 6:</p> <p>Function: transmitting digital data</p> <p>Structure: transceiver 50 (FIG. 9A) 101[10:9-13]; transceiver 4 (FIG. 2) 101[5:59-66]</p>	<p>U.S.C. § 112, ¶ 6</p> <p>Function: transmitting digital data derived by said transducers</p> <p>Structure: Software control data processor 54, output register fixed variable 52, frequency control 57, transceiver 50 and antenna 49 (Fig. 9A), including communication protocols and algorithms to the extent disclosed in Figs. 3, 4, 6B, 7B, 8A, 8B and at 8:8-62</p>	<p>transducers.</p> <p>Structure: transceiver 50 (FIG. 9A) as described at '101 Patent 10:9-13 and transceiver 4 (FIG. 2) as described at '101 Patent 5:59-66, and statutory equivalents.</p>
remote receiver <i>'546 Patent, Claim 1</i>	<p>Plain and Ordinary Meaning</p> <p>Alternate Proposal A receiver remote from or collocated with a transmitter, base station, and/or repeater</p>	<p>Equipment located in subdivided portions of a base station's geographic area to relay transmissions from subscriber units to the base station</p>	<p>A receiver remote from or collocated with a transmitter, base station, and/or repeater</p>
receive only stations <i>'101 Patent, Claim 20</i>	<p>Plain and Ordinary Meaning</p> <p>Alternate Proposal A receiver for receiving transmissions</p>	<p>Equipment located in subdivided portions of a base station's geographic area to relay transmissions from subscriber units to the base</p>	<p>A receiver for receiving transmissions</p>

		station	
receive only digital receiver <i>'546 Patent, Claim 14</i>	Plain and Ordinary Meaning Alternate Proposal A receiver for receiving and relaying digital communications	Equipment located in subdivided portions of a base station's geographic area to relay transmissions from subscriber units to the base station	A receiver for receiving and relaying digital communications
facilities in said base station and subscriber units for handing off communications between zones when communicated signals deteriorate below a given threshold <i>'101 Patent, Claim 20</i>	Plain and Ordinary Meaning, and this term is not governed by 35 U.S.C. § 112, ¶6. If this element is to be construed according to 35 U.S.C. § 112, ¶ 6: Function: handing off communications Structure: local area repeater station, local base station repeater cell, cell base station, cell (item 3 in FIG. 1, 2, 6A, 7A); software control facilities; 101[5:28-31]; software control data processor 54 (FIG. 9A); transceiver 50 (FIG. 9A); transceiver 4 (FIG. 2) software at SU (item 17 in FIG. 1);	This element should be construed according to 35 U.S.C. § 112, ¶ 6 Function: handing off communications between zones when communicated signals deteriorate below a given threshold Structure: Fig. 6B, 8:8-9:30 (describing receive signal strength indicators (RSSI) located in the base stations and subscriber units) *** If the Court concludes that this term should not be construed according to 35 U.S.C. § 112, ¶ 6, this term should be construed as:	Function: handing off communications between zones when communicated signals deteriorate below a given threshold. Structure: local area repeater station, local base station repeater cell, cell base station, cell (item 3 in FIG. 1, 2, 6A, 7A); software control facilities as described at '101 Patent 5:28-31; software control data processor 54 (FIG. 9A); transceiver 50 (FIG. 9A); transceiver 4 (FIG. 2) software at SU (item 17 in FIG. 1); the description at '101 Patent 8:8-9:44; FIG. 6B; response unit 4 (FIG. 1); remote receiver (FIG. 6B), and equivalents.

	101[8:8-9:44]; FIG. 6B; response unit 4 (FIG. 1); remote receiver (FIG. 6B)	Receive signal strength indicators (RSSI) located in the base station and subscriber units	
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